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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,734	04/13/2006	Gerhard Hoerpel	287299US0PCT	1677
22850	7590	08/08/2008		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER THOMAS, ERIC W	
			ART UNIT	PAPER NUMBER
			2831	
			NOTIFICATION DATE	DELIVERY MODE
			08/08/2008	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/575,734	<b>Applicant(s)</b> HOERPEL ET AL.	
	<b>Examiner</b> Eric Thomas	<b>Art Unit</b> 2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 22-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-25 and 34-42 is/are rejected.
- 7) ☒ Claim(s) 26-33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/08</u> .  | 6) <input type="checkbox"/> Other: _____                          |

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## INTRODUCTION

The examiner acknowledges, as recommended in the MPEP, the applicant's submission of the amendment dated 4/7/08. At this point, claims 25, 28-29 have been amended. Claims 22-42 are pending in the instant application.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 22-25, 34-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennige et al. (WO 03/073534) in view of Hirahara et al. (US 6,094,338).

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Hennige et al. disclose a separator for use in a system in which electrodes have to be separated from one another, wherein the separator is present on a carrier and is adhered thereto and is a porous inorganic nonelectroconductive coating which comprises particles of compounds of the elements Al, Si and/or Zr that are adhered to each other and to the carrier by an inorganic adhesive.

Hennige et al. disclose the claimed invention except that the separator is used in a capacitor.

Hirahara et al. teach that a capacitor requires a separator disposed between two electrodes.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the separator of Hennige et al. in a capacitor, since such a modification would form a capacitor having an improved separator.

Regarding claim 23, Hennige et al. disclose the carrier comprises woven or non-woven polymeric or glass fibers (see paragraph 29 - US publication 2005/084761).

Regarding claim 24, Hennige et al. disclose the carrier is flexible and less than 50  $\mu\text{m}$  in thickness (see paragraph 30 - US publication 2005/084761).

Regarding claim 25, Hennige et al. disclose the polymeric fibers are selected from fibers of polyacrylonitrile, polyamide, polyester and/or polyolefin (see paragraph 27 - US publication 2005/084761).

Regarding claim 34, Hennige et al. disclose the separating layer has a porosity in the range from 30% to 70% (see paragraph 31 - US publication 2005/084761).

Regarding claim 35, Hennige et al. disclose the inorganic adhesives are selected from oxides of the elements Al, Si and/or Zr (see paragraph 49 - US publication 2005/084761).

Regarding claim 36, Hennige et al. disclose the inorganic adhesive comprises particles having an average particle size of less than 20 nm and was produced via a particulate sol or comprises an inorganic network of the oxides which was produced via a polymeric sol (see paragraphs 47-48 - US publication 2005/084761).

Regarding claim 37, Hennige et al. disclose an inorganic network comprising silicon, the silicon of the network being bonded via oxygen atoms to the oxides of the inorganic coating and via an organic radical to the carrier which comprises polymeric fibers (see paragraph 49-57 & table - US publication 2005/084761).

Regarding claim 38, Hennige et al. disclose adhered particles of the compounds of the elements Al, Si and/or Zr that are present in the separator have an average particle size in a range from 0.5 to 10  $\mu\text{m}$ .

Regarding claim 39, Hirahara et al. teach that the capacitor comprises propylene carbonate solvent and tetraalkylammonium salt (see col. 11 lines 40-67, col. 12 lines 1-24).

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Regarding claim 40, the modified Hennige et al. disclose the claimed invention. The limitation, “obtainable by applying a suspension to the carrier and solidifying the suspension on and in the carrier by at least single heating, the suspension comprising a sol” is a method of forming the device. The method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. In re STEPHENS, WENZL, AND BROWNE, 145 USPQ 656 (CCPA 1965).

Regarding claim 41, the modified Hennige et al. disclose the claimed invention. The limitation, “the suspension is heated on the carrier at a temperature in the range from 170 to 280°C for from 0.5 to 10 minutes” is a method of forming the device. The method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. In re STEPHENS, WENZL, AND BROWNE, 145 USPQ 656 (CCPA 1965).

Regarding claim 42, the modified Hennige et al. disclose the energy storage device can be used for storing electrical energy in vehicles (see paragraph 62).

4. Claims 22-24, 34-35, 38-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennige et al. (WO 03/021697) in view of Hirahara et al. (US 6,094,338).

Hennige et al. disclose a separator for use in a system in which electrodes have to be separated from one another, wherein the separator is present on a carrier and is adhered thereto and is a porous inorganic nonelectroconductive

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coating which comprises particles of compounds of the elements Al, Si and/or Zr that are adhered to each other and to the carrier by an inorganic adhesive (see paragraph 45 -- US publication 2005/0031942).

Hennige et al. disclose the claimed invention except that the separator is used in a capacitor.

Hirahara et al. teach that a capacitor requires a separator disposed between two electrodes.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the separator of Hennige et al. in a capacitor, since such a modification would form a capacitor having an improved separator

Regarding claim 23, Hennige et al. disclose the carrier comprises woven or non-woven polymeric or glass fibers (see paragraph 45 -- US publication 2005/0031942).

Regarding claim 24, Hennige et al. disclose the carrier is flexible and less than 50  $\mu\text{m}$  in thickness (see paragraph 27 -- US publication 2005/0031942).

Regarding claim 34, Hennige et al. disclose the separating layer has a porosity in the range from 30% to 70% (see paragraph 36 -- US publication 2005/0031942).

Regarding claim 35, Hennige et al. disclose the inorganic adhesives are selected from oxides of the elements Al, Si and/or Zr (see paragraph 44-- US publication 2005/0031942).

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Regarding claim 38, Hennige et al. disclose adhered particles of the compounds of the elements Al, Si and/or Zr that are present in the separator have an average particle size in a range from 0.5 to 10  $\mu\text{m}$  (see paragraph 54 -- US publication 2005/0031942).

Regarding claim 39, Hirahara et al. teach that the capacitor comprises propylene carbonate solvent and tetraalkylammonium salt (see col. 11 lines 40-67, col. 12 lines 1-24).

Regarding claim 40, the modified Hennige et al. disclose the claimed invention. The limitation, "obtainable by applying a suspension to the carrier and solidifying the suspension on and in the carrier by at least single heating, the suspension comprising a sol" is a method of forming the device. The method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. In re STEPHENS, WENZL, AND BROWNE, 145 USPQ 656 (CCPA 1965).

Regarding claim 41, the modified Hennige et al. disclose the claimed invention. The limitation, "the suspension is heated on the carrier at a temperature in the range from 170 to 280°C for from 0.5 to 10 minutes" is a method of forming the device. The method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. In re STEPHENS, WENZL, AND BROWNE, 145 USPQ 656 (CCPA 1965).

Regarding claim 42, the modified Hennige et al. disclose the energy storage device can be used for storing electrical energy in vehicles.



***Response to Arguments***

5. Applicant's arguments filed 4/7/08 have been fully considered but they are not persuasive.

Applicant's argument that the Hennige et al. ('534) or Hennige et al. ('697) separators are for batteries and the examiner has not produced any references that teach separator materials for diverse electric devices are considered to be interchangeable, is not persuasive for at least the following reasons:

A) Hennige et al. ('534) & Hennige et al. ('697) disclose in paragraph [0001] (see US 2005/0031942 & US 2005/0084761) that the separator is not limited for use in a battery, but can be used "in other arrangements in which electrodes have to be separated from each other while maintaining ion conductivity." Hirahara et al. disclose such a device.

B) Battery and capacitor separators are interchangeable. See US 2003/0180622 A1 -- paragraph 1; US 2003/0062257 A1 -- paragraph 1; US 2002/0148723 A1 -- paragraph 1; US 2002/0045091 A1 -- paragraph 1; US 6,638,998 B2 -- col. 1 lines 5-10; US 5,748,439 -- col. 1 lines 5-17; US 4,713,731 -- col. 5 lines 1-5; and JP 2000331663A -- abstract.

6. Applicant's arguments, see page 8, filed 4/7/08, with respect to claims 26-33 have been fully considered and are persuasive. The rejection of claims 26-27, and 29-30 has been withdrawn.

***Allowable Subject Matter***

7. Claims 26-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or suggest (in combination with the claimed features) a capacitor wherein the carrier is an electrode (claims 26-33).

***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Thomas whose telephone number is 571-272-1985. The examiner can normally be reached on Monday - Friday 5:30 AM - 2:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Thomas/  
Primary Examiner, Art Unit 2831